



E85 Emissions Study

Subcontractor

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Subcontract Number

AF-2-11296-06

Performance Period

10/93-12/95

NREL Subcontract Administrator

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Objective

To evaluate the effect of 85% ethanol (EtOH) blended with 15% gasoline fuel on exhaust and evaporative emissions, toxics, and reactivity in prototype flexible fuel vehicle (FFV) and variable fuel vehicle (VFF) models.

Approach

Three prototype original equipment manufacturer (OEM) vehicles calibrated to run on gasoline or any mixture of EtOH and gasoline up to 85% EtOH were emission-tested on an industry average gasoline (IAG), a



Test vehicle on the chassis dynamometer

California Phase 2 reformulated gasoline (RFG), and E85 (85% EtOH, 15% gasoline) blended with the California Phase 2 RFG. Tailpipe and engine-out mass emissions and tailpipe species were measured during the Federal Test Procedure (FTP). Hot-soak evaporative emission tests were also run with each fuel.

Accomplishments

All tests have been completed and the results have been published. These same vehicles and fuels were tested in a dynamometer study of off-cycle exhaust emissions (see project sheet for Subcontract Number AF-2-11296-03).

Future Direction

These same vehicles and fuels will be tested in a dynamometer study of off-cycle exhaust emissions.

Publications

Benson, J.D. 1995. "Emissions from E85 Ethanol Fuel and Gasoline in Flexible/Variable Fuel Vehicles." Presented at the 1995 SAE International Congress & Exposition, Detroit, MI. March.

Benson, J.D. 1995. "Emissions with E85 and Gasolines and Flexible/Variable Fuel Vehicles," SAE Paper #952508.

Benson, J.D. 1995. CRC Auto/Oil Technical Bulletin #16.

